Kris Zacny

List of Publications by Year
in descending order

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92	764	759233 12	713466 21
papers	citations	h-index	g-index

95	95	95	693
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Science Goals and Objectives for the Dragonfly Titan Rotorcraft Relocatable Lander. Planetary Science Journal, 2021, 2, 130.	3.6	80
2	Subsurface Microbial Habitats in an Extreme Desert Mars-Analog Environment. Frontiers in Microbiology, 2019, 10, 69.	3.5	44
3	Deposition, accumulation, and alteration of Clâ^', NO3â^', ClO4â^' and ClO3â^' salts in a hyper-arid polar environment: Mass balance and isotopic constraints. Geochimica Et Cosmochimica Acta, 2016, 182, 197-215.	3.9	42
4	Autonomous soil analysis by the Mars Microâ€beam Raman Spectrometer (MMRS) onâ€board a rover in the Atacama Desert: a terrestrial test for planetary exploration. Journal of Raman Spectroscopy, 2015, 46, 810-821.	2.5	36
5	Distribution of depth to ice-cemented soils in the high-elevation Quartermain Mountains, McMurdo Dry Valleys, Antarctica. Antarctic Science, 2013, 25, 575-582.	0.9	30
6	The Sample Handling System for the Mars Icebreaker Life Mission: From Dirt to Data. Astrobiology, 2013, 13, 354-369.	3.0	25
7	Asteroid Mining. , 2013, , .		23
8	Robotic Drill Systems for Planetary Exploration. , 2006, , .		22
9	Pneumatic Excavator and Regolith Transport System for Lunar ISRU and Construction. , 2008, , .		22
10	Laser Desorption Mass Spectrometry at Saturnâ€™s moon Titan. International Journal of Mass Spectrometry, 2021, 470, 116707.	1.5	22
11	Novel Approaches to Drilling and Excavation on the Moon. , 2009, , .		20
12	Asteroids: Anchoring and Sample Acquisition Approaches in Support of Science, Exploration, and In situ Resource Utilization. , 2013, , 287-343.		20
13	Mobile In-Situ Water Extractor (MISWE) for Mars, Moon, and Asteroids In Situ Resource Utilization. , 2012, , .		18
14	A thermal model for analysis and control of drilling in icy formations on mars. Planetary and Space Science, 2012, 73, 214-220.	1.7	17
15	Investigating the Effects of Percussion on Excavation Forces. Journal of Aerospace Engineering, 2013, 26, 87-96.	1.4	17
16	Drilling Results in Ice-Bound Simulated Lunar Regolith. AIP Conference Proceedings, 2007, , .	0.4	15
17	Geochemical profile of a layered outcrop in the Atacama analogue using laserâ€induced breakdown spectroscopy: Implications for Curiosity investigations in Gale. Geophysical Research Letters, 2013, 40, 1965-1970.	4.0	15
18	Mission Architecture Using the SpaceX Starship Vehicle to Enable a Sustained Human Presence on Mars. New Space, 2022, 10, 259-273.	0.8	14

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19	Prototype rotary percussive drill for the Mars Sample Return mission. , 2011, , .		13
20	Mars2020 sample acquisition and caching technologies and architectures. , 2014, , .		13
21	The World is Not Enough (WINE): Harvesting Local Resources for Eternal Exploration of Space. , 2016, , .		12
22	Effect of Mars atmospheric pressure on percussive excavation forces. Journal of Terramechanics, 2014, 51, 43-52.	3.1	11
23	Development and characteristics of Mechanical Porous Ambient Comet Simulants as comet surface analogs. Planetary and Space Science, 2017, 147, 6-13.	1.7	11
24	Mars drill for the Mars sample return mission with a Brushing and Abrading bit, regolith and powder bit, core PreView Bit and a coring bit. , 2012, , .		10
25	Thermal Extraction of Volatiles from Lunar and Asteroid Regolith in Axisymmetric Crankâ€“Nicolson Modeling. Journal of Aerospace Engineering, 2020, 33, .	1.4	10
26	Investigating the Efficiency of Pneumatic Transfer of JSC-1a Lunar Regolith Simulant in Vacuum and Lunar Gravity During Parabolic Flights. , 2010, , .		9
27	Robotic Instrument for Grinding Rocks Into Thin Sections (GRITS). Advances in Space Research, 2013, 51, 2181-2193.	2.6	9
28	Mauna Kea, Hawaii, as an Analog Site for Future Planetary Resource Exploration: Results from the 2010 ILSO-ISRU Field-Testing Campaign. Journal of Aerospace Engineering, 2013, 26, 183-196.	1.4	7
29	BiBlade sampling tool validation for comet surface environments. , 2017, , .		7
30	Europan Molecular Indicators of Life Investigation (EMILI) for a Future Europa Lander Mission. Frontiers in Space Technologies, 2022, 2, .	1.4	7
31	Development of the Brushing, Abrading, Regolith, Core PreView and the Coring Bits for the Mars Sample Return Mission. , 2011, , .		6
32	Testing of a 1 meter Mars IceBreaker Drill in a 3.5 meter Vacuum Chamber and in an Antarctic Mars Analog Site. , 2011, , .		6
33	Auto-Gopher-2 - Wireline Deep Sampler Driven by Percussive Piezoelectric Actuator and Rotary EM Motors. Advances in Science and Technology, 0, , .	0.2	6
34	Red Dragon drill missions to Mars. Acta Astronautica, 2017, 141, 79-88.	3.2	6
35	SLUSH: Europa hybrid deep drill. , 2018, , .		6
36	Subsurface In Situ Detection of Microbes and Diverse Organic Matter Hotspots in the Greenland Ice Sheet. Astrobiology, 2020, 20, 1185-1211.	3.0	6

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37	Instant Landing Pads for Lunar Missions. , 2021, , .		6
38	Lunar Prospecting Rover Utilizing a Lunar Drill, Pneumatic Excavator, and Gas Jet Trencher. , 2012, , .		5
39	Pyramid Comet Sampler (PyCoS). , 2015, , .		5
40	Control Laws Development for a Free-Flying Unmanned Robotic System to Support Interplanetary Bodies Prospecting and Characterization Missions. , 2016, , .		5
41	Application of Pneumatics in Delivering Samples to Instruments on Planetary Missions. , 2019, , .		5
42	RedWater: Water Mining System for Mars. New Space, 2022, 10, 166-186.	0.8	5
43	Impact of Drilling Operations on Lunar Volatiles Capture: Thermal Vacuum Tests. , 2015, , .		4
44	Resource prospector drill performance during the integrated payload tests. , 2016, , .		4
45	Development of Venus drill. , 2017, , .		4
46	The scientific rationale for deployment of a long-lived geophysical network on the Moon. , 2021, 53, .		4
47	Lunar In-Situ Resource Utilization: Regolith Bags Automated Filling Technology. , 2008, , .		3
48	Real-World Mining Feasibility Studies Applied to Asteroids, the Moon and Mars. , 2011, , .		3
49	Percussive Excavation and Its Nullifying Effect on the Influence of Soil Relative Density. , 2012, , .		3
50	Development of a thin section device for space exploration: Overview and system performance estimates. Advances in Space Research, 2013, 51, 1659-1673.	2.6	3
51	Robotic Asteroid Prospector (RAP) NIAC Phase 1 Results. , 2014, , .		3
52	Using Distributed Transfer Function Method (DTFM) for Autonomous Health Monitoring of Interplanetary Drills. , 2015, , .		3
53	Vision-Aided Navigation for a Free-Flying Unmanned Robotic System to Support Interplanetary Bodies Prospecting and Characterization Missions. , 2016, , .		3
54	Full-scale dynamic touch-and-go validation of the BiBlade comet surface sample chain. , 2018, , .		3

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55	Linear Ion Trap Mass Spectrometer (LITMS) for in situ Astrobiology. , 2019, , .		3
56	Deep Trek: Science of Subsurface Habitability & Life on Mars. , 2021, 53, .		3
57	Dive, Dive, Dive: Accessing the Subsurface of Ocean Worlds. , 2021, 53, .		3
58	In-Situ Mineralogical Analysis of the Venus Surface using X-ray Diffraction. , 2021, 53, .		3
59	Robotics Technology for In Situ Mobility and Sampling. , 2021, 53, .		3
60	Drill Automation for the Space Environment: Lessons Learned. , 2007, , .		2
61	SAC architecture for the 2018 Mars Sample Return mission. , 2011, , .		2
62	Sample Acquisition and Caching Architectures for the Mars 2020 Rover Mission. , 2013, , .		2
63	A Comet Surface Sample Return Probe (CSSRP). , 2014, , .		2
64	Gypsum and other evaporites as a potential source for water extraction on Mars: experimental update. , 2018, , .		2
65	Development of a Deep Drill System with Integrated Deep UV/Raman Spectrometer for Mars and Europa. , 2018, , .		2
66	CheMinX: A Next Generation XRD/XRF for Quantitative Mineralogy and Geochemistry on Mars. , 2021, 53, .		2
67	Feasibility Study of Commercial Markets for New Sample Acquisition Devices. , 2010, , .		1
68	Parametric Optimization and Prediction Software for Excavation and Prospecting Tasks. , 2013, , .		1
69	Investigating Fluidized Granular Flow Behavior in Extraterrestrial Environments for a Pneumatic Regolith Acquisition System. , 2014, , .		1
70	Obtaining Vibration Data for Autonomous Health Monitoring of Interplanetary Drills. , 2016, , .		1
71	PlanetVac Xodiac: Lander Foot Pad Integrated Planetary Sampling System. , 2019, , .		1
72	Micro computed tomography for in situ analysis of subsurface structure. , 2021, , .		1

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73	In situ microCT for planetary exploration. , 2021, 53, .		1
74	GANGOTRI mission concept on the glacial key to the Amazonian climate of Mars. , 2021, 53, .		1
75	Sampling Ocean Materials, Traces of Life or Biosignatures in Plume Deposits on Enceladusâ€™ Surface. , 2021, 53, .		1
76	Melting Ice under Martian and other Environmental Conditions for ISRU. , 2021, , .		1
77	RedWater: Extraction of Water from Marsâ€™ Ice Deposits. , 2021, , .		1
78	Big Steps for Mankind: Extraterrestrial Sampling and Exploration 50 Years after Apollo 11. Geo-strata, 2020, 24, 42-48.	0.1	1
79	Stress and Displacement Wave Propagation in a Percussive Tubular Mechanism in Presence of Geometric Discontinuity. , 2011, , .		0
80	Unlocking the Climate Record Stored within Marsâ€™ Polar Layered Deposits. , 2021, 53, .		0
81	Mars Reconnaissance: Civil Engineering Advances for Human Exploration. , 2021, 53, .		0
82	Mission to Characterize Volatiles in Old, Cold, Permanently Shadowed Regions on the Moon. , 2021, 53, .		0
83	Deep Trek: Mission Concepts for Exploring Subsurface Habitability & Life on Mars â€” A Window into Subsurface Life in the Solar System. , 2021, 53, .		0
84	BIOMARS: A Foundational High-Resolution Environmental Sensor Array. , 2021, 53, .		0
85	SPRING Mission: Exploring the past and enabling the future of Mars. , 2021, 53, .		0
86	Exploring Solar System Organic Chemistry Evolution through the Surfaces of Ceres and Large Asteroids. , 2021, 53, .		0
87	Long-Term Commitment to Explore and Sustain our Earth-Moon Environment. , 2021, 53, .		0
88	Practical and Economic Rocket Mining of Lunar Ice. , 2021, , .		0
89	Identifying and Quantifying Volatile Content and Geotechnical Properties in the lunar PSRs. , 2021, , .		0
90	Pneumatic Sampler (P-Sampler) for the Martian Moons Exploration (MMX). , 2021, , .		0

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91	GaLORE (Gaseous Lunar Oxygen from Regolith Electrolysis): Technology Advances for a Cold-Walled Molten Regolith Electrolysis Reactor. , 2021, , .		0
92	Design, Development, and Successful Testing of the World's First Autonomous Downhole Robot for Live Production Logging and Intervention Operations. , 2022, , .		0